IN THE CLAIMS

Please amend the claims as follows.

1. (Currently Amended) An integrated circuit package comprising:

a substrate;

a die; and

a material having a Young's modulus of greater than 3 megapascals and a peeling stress of less than 13 megapascals ~~between about .1 megapascals and less than 3 megapascals~~, at a solder reflow temperature ~~of between 200 to 280°C~~, attaching the die to the substrate.

2. (Original) The integrated circuit package of claim 1, wherein the substrate comprises a ceramic.

3. (Original) The integrated circuit package of claim 1, wherein the die comprises one or more memory circuits.

4. (Original) The integrated circuit package of claim 1, wherein the die comprises one or more processor circuits.

5. (Original) The integrated circuit package of claim 1, wherein the die comprises one or more logic circuits.

6. (Original) The integrated circuit package of claim 1 wherein the die comprises one or more application specific integrated circuits.

7. (Original) The integrated circuit package of claim 1, wherein the material comprises a poly epoxide formed from one epoxide.

8. (Original) The integrated circuit package of claim 1, wherein the material comprises a poly epoxide formed from two or more epoxides.

9. (Original) The integrated circuit package of claim 1, wherein the material comprises a polyacrylate.

10. (Original) The integrated circuit package of claim 1, wherein the material comprises a polyolefin.

11. (Original) The integrated circuit package of claim 1, wherein the material comprises a polyimide.

12. (Original) The integrated circuit package of claim 1, wherein the material comprises a mixture of at least two of a poly epoxide, polyacrylate, polyimide, and polyolefin.

13. (Original) The integrated circuit package of claim 1, wherein the material comprises a copolymer of at least two of a poly epoxide, a polyacrylate, polyimide, and polyolefin.

14. (Original) The integrated circuit package of claim 1, wherein the material comprises a mixture of a poly epoxide and a polyimide.

15. (Original) The integrated circuit package of claim 1, wherein the material comprises a copolymer of a poly epoxide and a polyimide.

16. (Original) The integrated circuit package of claim 1, wherein the material has a Shore A hardness of greater than about 70.

17. (Original) The integrated circuit package of claim 1, wherein the material has a Shore D hardness of greater than about 20.

18. (Currently Amended) An integrated circuit package comprising:

a substrate;

a die; and

a material having a coefficient of thermal expansion α_2 of less than about 400 (four-hundred) ppm/°C attaching the die to the substrate, wherein the material has a Young's modulus of ~~between .1 megapascals and less than 3~~ greater than 4 megapascals, at a solder reflow temperature of between 200 to 280 °C. a peeling stress of less than 13 megapascals, and a maximum strain of less than 0.1.

19. (Original) The integrated circuit package of claim 18, wherein the substrate comprises a single metal layer glass-epoxide.

20. (Original) The integrated circuit package of claim 18, wherein the die comprises one or more processor circuits.

21. (Original) The integrated circuit package of claim 18 wherein the die comprises one or more memory circuits.

22. (Original) The integrated circuit package of claim 18, wherein the die comprises one or more logic circuits.

23. (Original) The integrated circuit package of claim 18, wherein the die comprises one or more application specific integrated circuits.

24. (Original) The integrated circuit package of claim 18, wherein the material comprises a poly epoxide formed from one epoxide.

25. (Original) The integrated circuit package of claim 18, wherein the material comprises a poly epoxide formed from two or more epoxides.

26. (Original) The integrated circuit package of claim 18, wherein the material comprises a polyacrylate.

27. (Original) The integrated circuit package of claim 18, wherein the material comprises a polyolefin.

28. (Original) The integrated circuit package of claim 18, wherein the material comprises a polyimide.

29. (Original) The integrated circuit package of claim 18, wherein the material comprises a mixture of at least two of a poly epoxide, polyacrylate, polyimide, and polyolefin.

30. (Original) The integrated circuit package of claim 18, wherein the material comprises a copolymer of at least two of a poly epoxide, a polyacrylate, polyimide, and polyolefin.

31. (Original) The integrated circuit package of claim 18, wherein the material comprises a mixture of a poly epoxide and a polyimide.

32. (Original) The integrated circuit package of claim 18, wherein the material comprises a copolymer of a poly epoxide and a polyimide.

33. (Original) The integrated circuit package of claim 18, wherein the material has a Shore A hardness of greater than about 70.

34. (Original) The integrated circuit package of claim 18, wherein the material has a Shore D hardness of greater than about 20.

35. (Currently Amended) An integrated circuit package comprising:

a rigid substrate;

a die; and

a rigid die attach material attaching the die to the substrate and having has a Young's modulus of over 0.1 megapascals at a solder reflow temperature of between 200 to 280 °C and a peeling stress of less than 17 megapascals.

36. (Original) The integrated circuit package of claim 35, wherein the substrate comprises a printed circuit board.

37. (Original) The integrated circuit package of claim 35, wherein the die comprises a communication circuit.

38. (Original) The integrated circuit package of claim 35, wherein the die comprises one or more memory circuits.

39. (Original) The integrated circuit package of claim 35, wherein the die comprises one or more processor circuits.

40. (Original) The integrated circuit package of claim 35, wherein the die comprises one or more logic circuits.

41. (Original) The integrated circuit package of claim 35, wherein the die comprises one or more application specific integrated circuits.

42. (Original) The integrated circuit package of claim 35, wherein the rigid die attach material comprises a poly epoxide formed from one epoxide.

43. (Original) The integrated circuit package of claim 35, wherein the rigid die attach material comprises a poly epoxide formed from two or more epoxides.

44. (Original) The integrated circuit package of claim 35, wherein the rigid die attach material comprises a polyacrylate.

45. (Original) The integrated circuit package of claim 35, wherein the rigid die attach material comprises a polyolefin.

46. (Original) The integrated circuit package of claim 35, wherein the rigid die attach material comprises a polyimide.

47. (Original) The integrated circuit package of claim 35, wherein the rigid die attach material comprises a mixture of at least two of a poly epoxide, polyacrylate, polyimide, and polyolefin.

48. (Original) The integrated circuit package of claim 35, wherein the rigid die attach material comprises a copolymer of at least two of a poly epoxide, a polyacrylate, polyimide, and polyolefin.

49. (Original) The integrated circuit package of claim 35, wherein the rigid die attach material comprises a mixture of a poly epoxide and a polyimide.

50. (Original) The integrated circuit package of claim 35, wherein the rigid die attach material comprises a copolymer of a poly epoxide and a polyimide.

51. (Original) The integrated circuit package of claim 35, wherein the rigid die attach material has a Shore A hardness of greater than about 70.

52. (Original) The integrated circuit package of claim 35, wherein the rigid die attach material has a Shore D hardness of greater than about 20.

53. - 107. (Canceled)

108. (Currently Amended) An integrated circuit package comprising:
a ceramic substrate;
a die; and

a material having a Young's modulus of between about .1 megapascals and less than 3 megapascals, at a solder reflow temperature of between 200 to 280 °C, attaching the die to the substrate, the material including a peeling stress of less than 17 megapascals.

109. (Original) The integrated circuit package of claim 108, wherein the ceramic substrate comprises a multi-metal layer ceramic substrate.

110. (Original) The integrated circuit package of claim 108, wherein the die comprises a communication circuit fabricated on a semiconductor.

111. (Original) The integrated circuit package of claim 108, wherein the die comprises one or more memory circuits.

112. (Original) The integrated circuit package of claim 108, wherein the die comprises one or more processor circuits.

113. (Original) The integrated circuit package of claim 108, wherein the die comprises one or more logic circuits.

114. (Original) The integrated circuit package of claim 108, wherein the die comprises one or more application specific integrated circuits.

115. (Original) The integrated circuit package of claim 108, wherein the material comprises one or more epoxides, poly epoxides, copolymers of epoxides, or mixtures thereof.

116. (Original) The integrated circuit package of claim 108, wherein the material comprises a poly epoxide formed from one epoxide.

117. (Original) The integrated circuit package of claim 108, wherein the material comprises a poly epoxide formed from two or more epoxides.

118. (Original) The integrated circuit package of claim 108, wherein the material comprises a polyacrylate.

119. (Original) The integrated circuit package of claim 108, wherein the material comprises a polyolefin.

120. (Original) The integrated circuit package of claim 108, wherein the material comprises a polyimide.

121. (Original) The integrated circuit package of claim 108, wherein the material comprises a mixture of at least two of a poly epoxide, polyacrylate, polyimide, and polyolefin.

122. (Original) The integrated circuit package of claim 108, wherein the material comprises a copolymer of at least two of a poly epoxide, a polyacrylate, polyimide, and polyolefin.

123. (Original) The integrated circuit package of claim 108, wherein the material comprises a mixture of a poly epoxide and a polyimide.

124. (Original) The integrated circuit package of claim 108, wherein the material comprises a copolymer of a poly epoxide and a polyimide.

125. (Original) The integrated circuit package of claim 108, wherein the material has a Shore A hardness of greater than about 70.

126. (Original) The integrated circuit package of claim 108, wherein the material has a Shore D hardness of greater than about 20.

127. - 135. (Canceled)

136. (Currently Amended) An integrated circuit package comprising:

a ceramic substrate;

a die; and

a rigid die attach material attaching the die to the substrate, wherein the rigid die attach material includes a Young's modulus of greater than 4 megapascals and a peeling stress of less than 12 megapascals.

137. (Original) The integrated circuit package of claim 136, wherein the ceramic substrate comprises a multilayered ceramic substrate.

138. (Original) The integrated circuit package of claim 136, wherein the die comprises germanium.

139. (Original) The integrated circuit package of claim 136, wherein the die comprises one or more memory circuits.

140. (Original) The integrated circuit package of claim 136, wherein the die comprises one or more processor circuits.

141. (Original) The integrated circuit package of claim 136, wherein the die comprises one or more logic circuits.

142. (Original) The integrated circuit package of claim 136, wherein the die comprises one or more application specific integrated circuits.

143. (Original) The integrated circuit package of claim 136, wherein the rigid die attach material comprises one or more epoxides, poly epoxides, copolymers of epoxides, or mixtures thereof.

144. (Original) The integrated circuit package of claim 136, wherein the rigid die attach material comprises a poly epoxide formed from one epoxide.

145. (Original) The integrated circuit package of claim 136, wherein the rigid die attach material comprises a poly epoxide formed from two or more epoxides.

146. (Original) The integrated circuit package of claim 136, wherein the rigid die attach material comprises a polyacrylate.

147. (Original) The integrated circuit package of claim 136, wherein the rigid die attach material comprises a polyolefin.

148. (Original) The integrated circuit package of claim 136, wherein the rigid die attach material comprises a polyimide.

149. (Original) The integrated circuit package of claim 136, wherein the rigid die attach material comprises a mixture of at least two of a poly epoxide, polyacrylate, polyimide, and polyolefin.

150. (Original) The integrated circuit package of claim 136, wherein the rigid die attach material comprises a copolymer of at least two of a poly epoxide, a polyacrylate, polyimide, and polyolefin.

151. (Original) The integrated circuit package of claim 136, wherein the rigid die attach material comprises a mixture of a poly epoxide and a polyimide.

152. (Original) The integrated circuit package of claim 136, wherein the rigid die attach material comprises a copolymer of a poly epoxide and a polyimide.

153. (Original) The integrated circuit package of claim 136, wherein the rigid die attach material has a Shore A hardness of greater than about 70.

154. (Original) The integrated circuit package of claim 136, wherein the rigid die attach material has a Shore D hardness of greater than about 20.

155. - 251. (Canceled)

252. (Previously Presented) An integrated circuit package comprising:

a substrate;

a die; and

a material having a coefficient of thermal expansion α_2 of between about one and about sixty-two ppm/°C attaching the die to the substrate, wherein the material has a Young's modulus of between .1 megapascals and less than 3 megapascals, at a solder reflow temperature of between 200 to 280 °C.

253. (Previously Presented) The integrated circuit package of claim 252, wherein the substrate comprises a single metal layer glass-epoxide.

254. (Previously Presented) The integrated circuit package of claim 252, wherein the die comprises one or more processor circuits.

255. (Previously Presented) The integrated circuit package of claim 252 wherein the die comprises one or more memory circuits.

256. (Previously Presented) The integrated circuit package of claim 252, wherein the die comprises one or more logic circuits.

257. (Previously Presented) The integrated circuit package of claim 252, wherein the die comprises one or more application specific integrated circuits.

258. (Previously Presented) The integrated circuit package of claim 252, wherein the material comprises a poly epoxide formed from one epoxide.

259. (Previously Presented) The integrated circuit package of claim 252, wherein the material comprises a poly epoxide formed from two or more epoxides.

260. (Previously Presented) The integrated circuit package of claim 252, wherein the material comprises a polyacrylate.

261. (Previously Presented) An integrated circuit package comprising:

a substrate;

a die; and

a material having a coefficient of thermal expansion α_2 of between about 151 (one-hundred and fifty-one) and about 400 (four-hundred) ppm/°C attaching the die to the substrate, wherein the material has a Young's modulus of between .1 megapascals and less than 3 megapascals, at a solder reflow temperature of between 200 to 280 °C.

262. (Previously Presented) The integrated circuit package of claim 261, wherein the material comprises a polyolefin.

263. (Previously Presented) The integrated circuit package of claim 261, wherein the material comprises a polyimide.

264. (Previously Presented) The integrated circuit package of claim 261, wherein the material comprises a mixture of at least two of a poly epoxide, polyacrylate, polyimide, and polyolefin.

265. (Previously Presented) The integrated circuit package of claim 261, wherein the material comprises a copolymer of at least two of a poly epoxide, a polyacrylate, polyimide, and polyolefin.

266. (Previously Presented) The integrated circuit package of claim 261, wherein the material comprises a mixture of a poly epoxide and a polyimide.

267. (Previously Presented) The integrated circuit package of claim 261, wherein the material comprises a copolymer of a poly epoxide and a polyimide.

268. (Previously Presented) The integrated circuit package of claim 261, wherein the material has a Shore A hardness of greater than about 70.

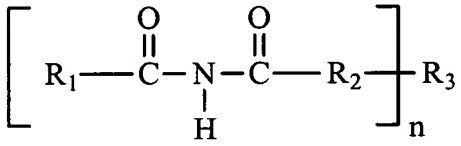
269. (Previously Presented) The integrated circuit package of claim 261, wherein the material has a Shore D hardness of greater than about 20.

270. (Previously Presented) An integrated circuit package comprising:

a substrate;

a die; and

a polyimide material having a Young's modulus of between 0.1 megapascals and about 20 megapascals, at a solder reflow temperature of between 200 to 280 °C, to attaching the die to the substrate, wherein the polyimide material is a compound of the formula:



wherein

n is 2 to about 1,000;

each R_1, R_2, and R_3 is independently $(C_1\text{-}C_{24})$alkyl, $(C_2\text{-}C_{24})$alkenyl, $(C_1\text{-}C_{24})$alkyl, $(C_3\text{-}C_8)$cycloalkyl, $(C_1\text{-}C_{24})$alkyl $(C_3\text{-}C_8)$cycloalkyl, $(C_6\text{-}C_{10})$aryl, $(C_6\text{-}C_{10})$heteroaryl, $(C_1\text{-}C_{24})$alkyl $(C_6\text{-}C_{10})$aryl, $(C_1\text{-}C_{24})$alkyl $(C_6\text{-}C_{10})$heteroaryl, $(C_6\text{-}C_{10})$aryl $(C_1\text{-}C_{24})$alkyl, $(C_6\text{-}C_{10})$heteroaryl $(C_1\text{-}C_{24})$alkyl, or $(C_3\text{-}C_8)$cycloalkyl $(C_1\text{-}C_{24})$alkyl;

any alkyl, alkenyl, alkynyl, cycloalkyl, aryl, or heteroaryl can optionally be substituted with one or more halo, trifluoromethyl, cyano, hydroxy, nitro, $C(=O)OR_6$, wherein R_6 is

hydrogen or (C_1-C_{24})alkyl, or NR_7R_8, wherein each R_7 and R_8 are independently hydrogen or (C_1-C_{24})alkyl; and

any alkyl, alkenyl, or alkynyl is optionally interrupted with one or more oxo, thio, sulfonyl, or sulfinyl;

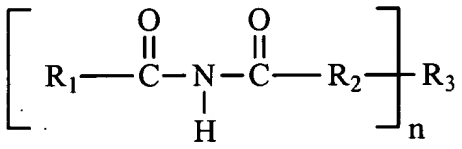
or a suitable salt thereof.

271. (Previously Presented) An integrated circuit package comprising:

a substrate;

a die; and

a polyimide material having a Young's modulus of between 0.1 megapascals and about 20 megapascals, at a solder reflow temperature, for attaching the die to the substrate, wherein the polyimide material is a compound of the formula:



wherein

n is 2 to about 1,000;

each R_1, R_2, and R_3 is independently (C_1-C_{24})alkyl, (C_2-C_{24})alkenyl, (C_1-C_{24})alkyl, (C_3-C_8)cycloalkyl, (C_1-C_{24})alkyl (C_3-C_8)cycloalkyl, (C_6-C_{10})aryl, (C_6-C_{10})heteroaryl, (C_1-C_{24})alkyl (C_6-C_{10})aryl, (C_1-C_{24})alkyl (C_6-C_{10})heteroaryl, (C_6-C_{10})aryl (C_1-C_{24})alkyl, (C_6-C_{10})heteroaryl (C_1-C_{24})alkyl, or (C_3-C_8)cycloalkyl (C_1-C_{24})alkyl;

any alkyl, alkenyl, alkynyl, cycloalkyl, aryl, or heteroaryl can optionally be substituted with one or more halo, trifluoromethyl, cyano, hydroxy, nitro, $C(=O)OR_6$, wherein R_6 is hydrogen or (C_1-C_{24})alkyl, or NR_7R_8, wherein each R_7 and R_8 are independently hydrogen or (C_1-C_{24})alkyl; and

any alkyl, alkenyl, or alkynyl is optionally interrupted with one or more oxo, thio, sulfonyl, or sulfinyl;

or a suitable salt thereof; and

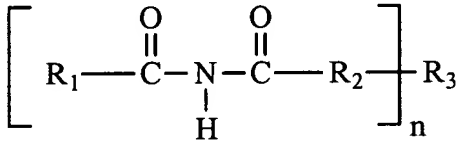
wherein n is in a range of two to 1000.

272. (Previously Presented) An integrated circuit package comprising:

a substrate;

a die; and

a polyimide material having a Young's modulus of between 0.1 megapascals and about 20 megapascals, at a solder reflow temperature of between 200 to 280 °C, to attaching the die to the substrate, wherein the polyimide material is a compound of the formula:



, wherein R_1 is $(C_1\text{-}C_{24})$alkenyl, and wherein each R_2 and R_3 is independently $(C_1\text{-}C_{24})$alkyl, $(C_2\text{-}C_{24})$alkenyl, $(C_1\text{-}C_{24})$alkyl, $(C_3\text{-}C_8)$cycloalkyl, $(C_1\text{-}C_{24})$alkyl $(C_3\text{-}C_8)$cycloalkyl, $(C_6\text{-}C_{10})$aryl, $(C_6\text{-}C_{10})$heteroaryl, $(C_1\text{-}C_{24})$alkyl $(C_6\text{-}C_{10})$aryl, $(C_1\text{-}C_{24})$alkyl $(C_6\text{-}C_{10})$heteroaryl, $(C_6\text{-}C_{10})$aryl $(C_1\text{-}C_{24})$alkyl, $(C_6\text{-}C_{10})$heteroaryl $(C_1\text{-}C_{24})$alkyl, or $(C_3\text{-}C_8)$cycloalkyl $(C_1\text{-}C_{24})$alkyl;

any alkyl, alkenyl, alkynyl, cycloalkyl, aryl, or heteroaryl can optionally be substituted with one or more halo, trifluoromethyl, cyano, hydroxy, nitro, $C(=O)OR_6$, wherein R_6 is hydrogen or $(C_1\text{-}C_{24})$alkyl, or NR_7R_8, wherein each R_7 and R_8 are independently hydrogen or $(C_1\text{-}C_{24})$alkyl; and

any alkyl, alkenyl, or alkynyl is optionally interrupted with one or more oxo, thio, sulfonyl, or sulfinyl;

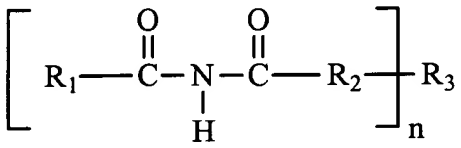
or a suitable salt thereof.

273. (Previously Presented) An integrated circuit package comprising:

a substrate;

a die; and

a polyimide material having a Young's modulus of between 0.1 megapascals and about 20 megapascals, at a solder reflow temperature of between 200 to 280 °C, to attaching the die to the substrate, wherein the polyimide material is a compound of the formula:



, wherein R_2 is $(C_2\text{-}C_{24})$alkenyl, and wherein each R_1 and R_3 is independently $(C_1\text{-}C_{24})$alkyl, $(C_2\text{-}C_{24})$alkenyl, $(C_1\text{-}C_{24})$alkyl, $(C_3\text{-}C_8)$cycloalkyl, $(C_1\text{-}C_{24})$alkyl $(C_3\text{-}C_8)$cycloalkyl, $(C_6\text{-}C_{10})$aryl, $(C_6\text{-}C_{10})$heteroaryl, $(C_1\text{-}C_{24})$alkyl $(C_6\text{-}C_{10})$aryl, $(C_1\text{-}C_{24})$alkyl $(C_6\text{-}C_{10})$heteroaryl, $(C_6\text{-}C_{10})$aryl $(C_1\text{-}C_{24})$alkyl, $(C_6\text{-}C_{10})$heteroaryl $(C_1\text{-}C_{24})$alkyl, or $(C_3\text{-}C_8)$cycloalkyl $(C_1\text{-}C_{24})$alkyl;

any alkyl, alkenyl, alkynyl, cycloalkyl, aryl, or heteroaryl can optionally be substituted with one or more halo, trifluoromethyl, cyano, hydroxy, nitro, $C(=O)OR_6$, wherein R_6 is hydrogen or $(C_1\text{-}C_{24})$alkyl, or NR_7R_8, wherein each R_7 and R_8 are independently hydrogen or $(C_1\text{-}C_{24})$alkyl; and

any alkyl, alkenyl, or alkynyl is optionally interrupted with one or more oxo, thio, sulfonyl, or sulfinyl;

or a suitable salt thereof.

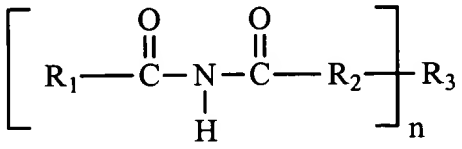
274. (Previously Presented) An integrated circuit package comprising:

a substrate;

a die; and

a polyimide material having a Young's modulus of between 0.1 megapascals and about 20 megapascals, at a solder reflow temperature of between 200 to 280 °C, to attaching the die to the substrate, wherein the

polyimide material is a compound of the formula:



, wherein R_3 is $(C_2\text{-}C_{24})$alkenyl, and wherein each R_1 and R_2 is independently $(C_1\text{-}C_{24})$alkyl, $(C_2\text{-}C_{24})$alkenyl, $(C_1\text{-}C_{24})$alkyl, $(C_3\text{-}C_8)$cycloalkyl, $(C_1\text{-}C_{24})$alkyl $(C_3\text{-}C_8)$cycloalkyl, $(C_6\text{-}C_{10})$aryl, $(C_6\text{-}C_{10})$heteroaryl, $(C_1\text{-}C_{24})$alkyl $(C_6\text{-}C_{10})$aryl, $(C_1\text{-}C_{24})$alkyl $(C_6\text{-}C_{10})$heteroaryl, $(C_6\text{-}C_{10})$aryl $(C_1\text{-}C_{24})$alkyl, $(C_6\text{-}C_{10})$heteroaryl $(C_1\text{-}C_{24})$alkyl, or $(C_3\text{-}C_8)$cycloalkyl $(C_1\text{-}C_{24})$alkyl;

any alkyl, alkenyl, alkynyl, cycloalkyl, aryl, or heteroaryl can optionally be substituted with one or more halo, trifluoromethyl, cyano, hydroxy, nitro, $C(=O)OR_6$, wherein R_6 is hydrogen or $(C_1\text{-}C_{24})$alkyl, or NR_7R_8, wherein each R_7 and R_8 are independently hydrogen or $(C_1\text{-}C_{24})$alkyl; and

any alkyl, alkenyl, or alkynyl is optionally interrupted with one or more oxo, thio, sulfonyl, or sulfinyl;

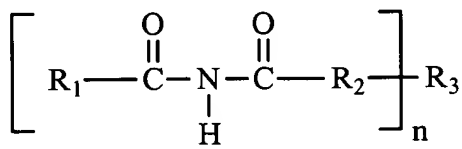
or a suitable salt thereof.

275. (Previously Presented) An integrated circuit package comprising:

a substrate;

a die; and

a polyimide material having a Young's modulus of between 0.1 megapascals and about 20 megapascals, at a solder reflow temperature, for attaching the die to the substrate, wherein the polyimide material is a compound of the formula:



wherein

n is 2 to about 1,000;

each R_1, R_2, and R_3 is independently $(C_1\text{-}C_{24})$alkyl, $(C_2\text{-}C_{24})$alkenyl, $(C_1\text{-}C_{24})$alkyl, $(C_3\text{-}C_8)$cycloalkyl, $(C_1\text{-}C_{24})$alkyl $(C_3\text{-}C_8)$cycloalkyl, $(C_6\text{-}C_{10})$aryl, $(C_6\text{-}C_{10})$heteroaryl, $(C_1\text{-}C_{24})$alkyl $(C_6\text{-}C_{10})$aryl, $(C_1\text{-}C_{24})$alkyl $(C_6\text{-}C_{10})$heteroaryl, $(C_6\text{-}C_{10})$aryl $(C_1\text{-}C_{24})$alkyl, $(C_6\text{-}C_{10})$heteroaryl $(C_1\text{-}C_{24})$alkyl, or $(C_3\text{-}C_8)$cycloalkyl $(C_1\text{-}C_{24})$alkyl;

any alkyl, alkenyl, alkynyl, cycloalkyl, aryl, or heteroaryl can optionally be substituted with one or more halo, trifluoromethyl, cyano, hydroxy, nitro, $C(=O)OR_6$, wherein R_6 is hydrogen or $(C_1\text{-}C_{24})$alkyl, or NR_7R_8, wherein each R_7 and R_8 are independently hydrogen or $(C_1\text{-}C_{24})$alkyl; and

any alkyl, alkenyl, or alkynyl is optionally interrupted with one or more oxo, thio, sulfonyl, or sulfinyl;

or a suitable salt thereof; and

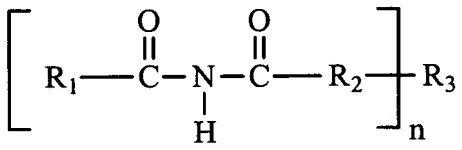
wherein the substrate comprises a ceramic.

276. (Previously Presented) An integrated circuit package comprising:

a substrate;

a die; and

a polyimide material having a Young's modulus of between 0.1 megapascals and about 20 megapascals, at a solder reflow temperature, for attaching the die to the substrate, wherein the polyimide material is a compound of the formula:



wherein

n is 2 to about 1,000;

each R_1, R_2, and R_3 is independently $(C_1\text{-}C_{24})$alkyl, $(C_2\text{-}C_{24})$alkenyl, $(C_1\text{-}C_{24})$alkyl, $(C_3\text{-}C_8)$cycloalkyl, $(C_1\text{-}C_{24})$alkyl $(C_3\text{-}C_8)$cycloalkyl, $(C_6\text{-}C_{10})$aryl, $(C_6\text{-}C_{10})$heteroaryl, $(C_1\text{-}C_{24})$alkyl

$(C_6\text{-}C_{10})$aryl, $(C_1\text{-}C_{24})$alkyl $(C_6\text{-}C_{10})$heteroaryl, $(C_6\text{-}C_{10})$aryl $(C_1\text{-}C_{24})$alkyl, $(C_6\text{-}C_{10})$heteroaryl $(C_1\text{-}C_{24})$alkyl, or $(C_3\text{-}C_8)$cycloalkyl $(C_1\text{-}C_{24})$alkyl;

any alkyl, alkenyl, alkynyl, cycloalkyl, aryl, or heteroaryl can optionally be substituted with one or more halo, trifluoromethyl, cyano, hydroxy, nitro, $C(=O)OR_6$, wherein R_6 is hydrogen or $(C_1\text{-}C_{24})$alkyl, or NR_7R_8, wherein each R_7 and R_8 are independently hydrogen or $(C_1\text{-}C_{24})$alkyl; and

any alkyl, alkenyl, or alkynyl is optionally interrupted with one or more oxo, thio, sulfonyl, or sulfinyl;

or a suitable salt thereof; and

wherein the die comprises one or more memory circuits.

277. (Previously Presented) An apparatus comprising:

a die having a bottom surface, the bottom surface including a first area with contacts thereon and a second area free of contacts and radially outside the first area;

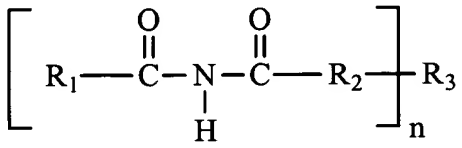
a substrate having a top surface that is mechanically attached to the second area of the bottom surface of the die with a die attach material having a Young's modulus of at least 0.1 megapascals at a solder reflow temperature and a coefficient of thermal expansion α_2 of about 400 parts per million, the substrate including an interior aperture aligned with the first area of the bottom surface of the die, the substrate further including a bottom surface that includes contacts thereon;

at least two wires connected to the contacts on the bottom surface of the die, extending through the interior aperture of the substrate, and connected to the contacts on the bottom surface of the substrate;

a board having a top surface that is mechanically attached to the bottom surface of the substrate with one or more solder balls in electrical communication with the contacts on the bottom surface of the substrate, the solder balls having at a solder reflow temperature of between 200 to 280°C; and

a molding compound to cover the die, the die attach material, and a portion of the top surface of the substrate, the molding compound extending through the interior aperture of the substrate and enclosing the wires, wherein the board is free of contact to the molding compound.

278. (Previously Presented) The apparatus of claim 277, wherein the die attach material is a polyimide material that is a compound of the formula:



wherein

n is 2 to about 1,000;

each R_1, R_2, and R_3 is independently $(C_1\text{-}C_{24})$alkyl, $(C_2\text{-}C_{24})$alkenyl, $(C_1\text{-}C_{24})$alkyl, $(C_3\text{-}C_8)$cycloalkyl, $(C_1\text{-}C_{24})$alkyl $(C_3\text{-}C_8)$cycloalkyl, $(C_6\text{-}C_{10})$aryl, $(C_6\text{-}C_{10})$heteroaryl, $(C_1\text{-}C_{24})$alkyl $(C_6\text{-}C_{10})$aryl, $(C_1\text{-}C_{24})$alkyl $(C_6\text{-}C_{10})$heteroaryl, $(C_6\text{-}C_{10})$aryl $(C_1\text{-}C_{24})$alkyl, $(C_6\text{-}C_{10})$heteroaryl $(C_1\text{-}C_{24})$alkyl, or $(C_3\text{-}C_8)$cycloalkyl $(C_1\text{-}C_{24})$alkyl;

any alkyl, alkenyl, alkynyl, cycloalkyl, aryl, or heteroaryl can optionally be substituted with one or more halo, trifluoromethyl, cyano, hydroxy, nitro, $C(=O)OR_6$, wherein R_6 is hydrogen or $(C_1\text{-}C_{24})$alkyl, or NR_7R_8, wherein each R_7 and R_8 are independently hydrogen or $(C_1\text{-}C_{24})$alkyl; and

any alkyl, alkenyl, or alkynyl is optionally interrupted with one or more oxo, thio, sulfonyl, or sulfinyl;

or a suitable salt thereof; and

wherein the substrate comprises a ceramic.